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Zurich. Later he spent a year in Cambridge with Professor J. J. Thomson. His courses at the University of Illinois will be in theoretical physics.

THE following are the new appointments in the scientific departments of the University of Kansas: Frederick E. Kester, professor of physics and head of the department; George C. Shaad, professor of electrical engineering and head of the department; Harry Gardner, assistant professor of sanitary engineering; Roy L. Moodie, assistant professor in zoology; Wilhelmina Bauer, instructor in mathematics; Jas. T. Bowles, instructor in pharmacy; H. J. Broderon, instructor in chemistry; Paul V. Faragher, instructor in chemistry; Arthur B. Frizell, instructor in mathematics; Meyer Gaba, instructor in mathematics; Florence Hedger, instructor in chemistry; Chester A. Johnson, instructor in physics; Nadine Nowlin, instructor in zoology; Howard A. Parker, instructor in civil engineering; George N. Watson, instructor in pharmacy; Paul Wernicke, instructor in mathematics; Bert C. Frichot, laboratory assistant in chemistry; Clifford P. Johnson, assistant instructor in physiology; C. A. Nash, assistant instructor in chemistry; E. R. Weidlein, assistant instructor in chemistry; Edward Wiedemann, assistant instructor in bacteriology.

A CHAIR of physical chemistry and metallurgy has been established at Frankfort to which Dr. Lorenz, of Zurich, has been called.

#### DISCUSSION AND CORRESPONDENCE

##### THE COUNTRY BOY

IN SCIENCE for July 2 Dr. Frederick Adams Woods replies to my article of May 7. I am very glad to learn from this article of Dr. Woods that we are not so far apart as I had suspected. I had thought that he claimed that practically heredity had everything and environment very little indeed to do with the development of character. Evidently I have misunderstood him, for in the article in question he indicates clearly that he believes that environment may produce profound results in character. Dr. Woods misinterprets part of what I said, or at least he does not get the idea

which I meant to convey. Perhaps the fault is entirely my own. What I meant to say was that the environment of royalty is such as to give an opportunity for the full development of the natural tendencies of the individual and, therefore, in this class of people heredity will more nearly account for intellectual ability and moral character than it will in those classes of society who do not live under an environment that will give full opportunity for the development of the natural bent of the individual.

Since the publication of my last article I have been able to collect some data which is of interest in connection with the effect of farm life on the growing boy, and while these data are meager they seem to me to be favorable to the assumption that if other things could be equalized the life of the farm has a very distinct educational value. Dr. Woods has shown that at the time when the average man noted in "Who's Who" was a boy, about 16 per cent. of our population lived in the cities. He further showed that about 30 per cent. of the individuals in "Who's Who" were brought up in the city. He accounts for this excess of city men amongst men of note by the fact that the city attracts talent, the percentage of ability in the city, therefore, being greater than in the country. He would, therefore, explain the excess of city men mainly as the result of heredity. He may be correct in this position. I am inclined at present, however, to believe that while this excess may be partly due to the fact that talent is attracted to the city and that, therefore, the city child has a better chance of inheriting talent, part of it is due to the fact that the cities in general have better school facilities than the country. Most of the men in "Who's Who" are those who had good educational advantages. I suspect, therefore, that if an adequate study were made we should find that in this case environment has had something to do with the fact that 30 per cent. of the men in "Who's Who" are from the city. But for the sake of argument let us accept Dr. Woods's point of view. It would then follow that 30 per cent. of our leading men should be accredited to the city if their leadership is due entirely to heredity. Now for the facts in the

case. It is recognized that the following statistics are meager and that conclusions can only be drawn from them tentatively, but the fact that the figures are consistent with each other confirms their correctness. The following table gives statistics for the three classes of men who may be, perhaps, placed highest amongst the list of our leading men:

Class of Men	City	Country and Village	Per Cent. from Country
Presidents . . . . .	2	23	92.0
Governors . . . . .	4	41	91.2
Cabinet officers . . .	9	47	83.9
Totals . . . . .	15	111	88.2

The figures for presidents include all the presidents this country has had. Of course in the early days a smaller proportion of our population lived in the cities. But this criticism can not be applied to the list of governors. Figures for this class of men relate to the present governors of the states. It is seen that 91.2 per cent. of this class of men are from the country or village. The figures for cabinet officers include members of cabinets between 1869 and 1903. The average of these three classes of men shows 88.2 per cent. of them from the country. Now, if we accept Dr. Woods's view that the cities furnish a larger proportion of our leading men for the reason that talent is attracted to the city, the proportion of these men coming from the country should be considerably less than the proportion of our population in the country, but the facts show that the proportion of these men from the country is actually greater than the proportion of country population. This seems to me to argue strongly for farm life as an educational force. In the case of governors, of the forty-five who answered my queries four were born and reared in the city, seven of them in country villages and thirty-similar data for the other classes.

I have received replies from forty-seven railway presidents in this country. Of these 55.4 per cent. are credited to the village and country. When we remember that preferment in this industry is greatly influenced by hereditary wealth it seems to me that the fact that so large a percentage of these men are country

bred is somewhat significant. Statistics for members of the house of representatives are of less value for our present purpose than most of the other statistics given here, for the reason that nativity is a distinct force in politics, and that many representative districts are wholly city while others are wholly country districts. Sixty-four per cent. of the present members of the house of representatives are from the country. Figures for members of the senate are of more value in this respect, since senators represent states. Yet the fact that most of our senators are very wealthy men would seem to justify the inference that the city has more than its share of this class of men, yet 70.6 per cent. of the eighty-five members of the present senate for whom data could be obtained are from the country. Taking all six of these classes of men, the average per cent. from the country is 69.4. It will be noted that the higher we go in the scale of leadership in those classes which are least influenced by extraneous considerations, the higher is the per cent. of country-bred men. I believe these figures substantiate the claim made in my original article, namely, that country life has a distinct educational value. But what is it in country life that gives this advantage? President Lucius Tuttle, of the Boston and Maine Railroad, in answering my circular letter answers this question. He says:

Among other things, the farm boy learns methods of economy and, incidentally, the value of money. He is a part of the business machinery of the farm and is brought into close contact with all its affairs. He learns methods of trade and how to buy and sell, as well as possible, without incurring losses and, later on when he leaves the farm and goes into a general business, the education he has acquired during his farm life becomes a fundamental and valuable part of his after business life.

As a general rule, the city boy has no connection with his father's business and knows nothing about it. His father may be eminently successful but the boy has nothing to do with making his success and is very seldom allowed to be cognizant of the methods of business his father uses. Under modern conditions, school life gives the boy very little business knowledge and, at the end of his

school education, when he enters business, he is obliged to begin at the bottom of the ladder without knowledge of many things that the farm boy has learned in connection with his daily home life.

To my mind this is the fundamental reason why boys brought up on the farm appear to make better successes in their after business life than do city boys who have not had the advantages of a similar business training in their earlier days.

President White, of the Richmond, Fredericksburg and Potomac Railroad Company, in discussing the effect of life on the farm, says:

It is preeminently, in my judgment, an experience which develops independence and self-reliance and, therefore, I think, the spirit of achievement, more than any other I know of.

Another railroad president remarks:

I believe that farm life lays a good and broad foundation for a healthy, vigorous manhood in both mind and body.

Another noted railway man, who never spent a day on the farm, says:

I am inclined to think boys brought up on the farm have better constitutions and are less liable to temptations.

President L. W. Hill, of the Great Northern Railway, says:

My present home is on a farm and my principal reason for making my home there, rather than at some of the lakes or in the city, is that I have three boys of my own I am trying to give a fair start in life. I believe there is no end of arguments that living on the farm gives the best chance for a growing boy. While my making the farm my home sometimes works an inconvenience to me, I realize that the benefits to my children are well worth the inconvenience to me of getting in and out between my office and the farm.

I have always contended that the value of farm rearing lies in the fact that on the farm there is a chance to place responsibility on the growing boy. I firmly believe that it is possible to work out a system of education that will give our schools all the advantages of the farm life. This is being done, to a certain extent, in the cities, and I believe that this fact has something to do with the increasing number of strong men who come from the city. But I must admit that the actual data on this subject are very meager and I join Dr.

Woods in the hope that some careful student will give this question the investigation which its importance demands. W. J. SPILLMAN

U. S. DEPARTMENT OF AGRICULTURE

#### DOCTORATES CONFERRED BY AMERICAN UNIVERSITIES

I REGRET to find that several errors were made in compiling the statistics of the doctorates conferred by American universities (SCIENCE for August 20). The number of degrees conferred by Wisconsin was sixteen (not seven), of which four were in the sciences. There were five degrees (not three) in geology conferred by Yale with geology as the major subject. On page 266, column 2, line 4, Michigan should be substituted for Washington. The assistant who compiled the data is not without excuse for these errors; for example, in the case of Wisconsin the doctorates conferred are given in two different places on the commencement program without any cross references. But I regret the occurrence of errors in statistics which I believe have hitherto been free from them.

J. McKEEN CATTELL

#### THE NOMENCLATORIAL COURT

TO THE EDITOR OF SCIENCE: Some weeks ago Mr. Francis N. Balch called attention in the columns of SCIENCE to the need of a court for determination of questions in zoological nomenclature. It appears that the International Congress of Zoologists has appointed a Nomenclature Commission of which Dr. C. W. Stiles, of Washington, is secretary, which performs the functions of such a court although its work is still far from being well developed or appreciated.

It appears that the International Congress has not made any appropriation for the expenses of this court whose labors have hitherto been carried on as a work of love. As the business before the court has accumulated the need of a paid clerk becomes urgent. As I understand the International Congress has no means of raising funds for the carrying on of the business of its committee, it is obviously the duty of those who most directly profit by the activities of the committee to pay a tax